

WHAT IS CLAIMED IS:

1. A building material composition comprising
  - a) a co- or ter-polymer of (i) a material selected from the group consisting of carboxylic acid, sulfonic acid, phosphonic acid, amide form thereof or mixtures thereof and (ii) at least one polyethyleneglycol monoallyl ether sulfate and
  - b) a binding material comprised of cement or gypsum.
2. The building material composition of claim 1, wherein the binding material is Portland cement.
3. The building material composition of claim 2, wherein the cement is selected from the group consisting of concrete, tile cements and adhesives, projection plasters, stuccos based on cement and synthetic binders, ready mixed mortars, manually applied mortars, underwater concrete, joint cement, crack fillers, floor screeds, and adhesive mortars.
4. The building material composition of claim 1, wherein the gypsum is plaster of Paris.
5. The building material of claim 1, wherein the material of a)i) is selected from the group consisting of acrylic acid, methacrylic acid, acrylamide, methacrylamide, N-methyl acrylamide, N, N-dimethyl acrylamide, N-isopropylacrylamide, maleic acid or anhydride, fumaric acid, itaconic acid, styrene, sulfonic acid, vinyl sulfonic acid, isopropenyl phosphonic acid, vinyl phosphonic acid, vinylidene di-phosphonic acid, 2-acrylamido-2-methylpropane sulfonic acid and mixtures thereof.
6. The building material of claim 1, wherein the weight average molecular weight (Mw) of the co- or ter-polymer has a lower limit of 1000 Daltons.

7. The building material of claim 1, wherein the weight average molecular weight (Mw) of the co- or ter-polymer has a lower limit of 1500 Daltons.

5 8. The building material of claim 1, wherein the weight average molecular weight (Mw) of the co- or ter-polymer has an upper limit of 1,000,000 Daltons.

9. The building material of claim 1, wherein the weight average  
10 molecular weight (Mw) of the co- or ter-polymer has an upper limit of 50,000 Daltons.

10. The building material of claim 1, wherein the weight average  
15 molecular weight (Mw) of the co- or ter-polymer has an upper limit of 25,000 Daltons.

11. The building material composition of claim 1, wherein a)(i) is acrylic acid.

12. The building material composition of claim 11, wherein a)(ii) is ammonium allylpolyethoxy (10) sulphate.

13. The building material composition of claim 12, wherein a)(ii) also includes 1-allyloxy-2-hydroxypropyl-3-sulfonic acid.

14. The building material composition of claim 1, wherein a)(i) is a mixture of acrylic acid and methacrylic acid and a)(ii) is ammonium allylpolyethoxy (10) sulphate.

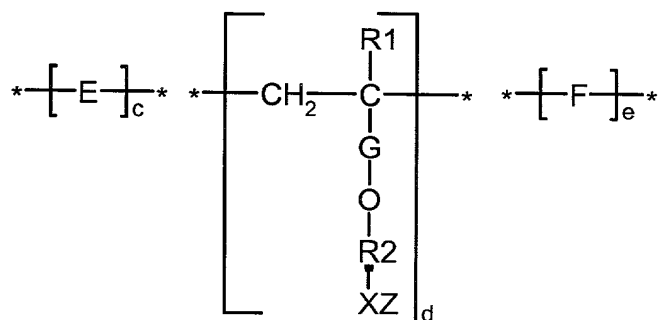
15. The building material composition of claim 1, wherein a)(i) is a mixture of acrylic acid and 2-acrylamido-2-methylpropane sulfonic acid.

16. The building material composition of claim 11, wherein a)(ii) is allylpolyethoxy (10) phosphate.

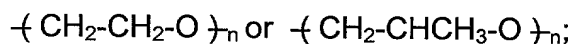
17. The building material composition of claim 1, wherein a)(i) is methacrylic acid and a)(ii) is ammonium allylpolyethoxy (10) sulphate.

18. A building material composition comprising

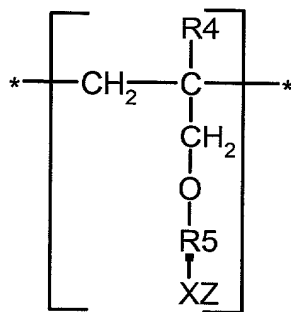
(a) a water-soluble or water dispersible polymer of the formula:



wherein E is the repeating unit remaining after polymerization of an ethylenically unsaturated compound; R<sub>1</sub> is H or lower (C<sub>1</sub>-C<sub>4</sub>) alkyl; G is -CH<sub>2</sub>- or -CHCH<sub>3</sub>-; R<sub>2</sub> is



wherein n ranges from about 1 to 100; X is SO<sub>3</sub>, PO<sub>3</sub> or COO; Z is H, or a water soluble cationic moiety; F is a repeating unit of the formula:



wherein R<sub>4</sub> is H or lower (C<sub>1</sub>-C<sub>4</sub>) alkyl, R<sub>5</sub> is hydroxy substituted alkyl or alkylene having from 1 to 6 carbon atoms; c and d are positive integers; and e is a non-negative integer, and

- 5           (b)     a binding material comprised of cement or gypsum.

19. The building material composition of claim 18, wherein said ethylenically unsaturated compound is one or more of members selected from the group consisting of carboxylic acid, sulfonic acid, phosphonic acid, amide  
10    form thereof, and mixtures thereof.

20. The building material of claim 19, wherein said ethylenically unsaturated compound is one or more of members selected from the group consisting of acrylic acid, methacrylic acid, acrylamide, methacrylamide, N-  
15    methyl acrylamide, N, N-dimethyl acrylamide, N-isopropyl acrylamide, maleic acid or anhydride, fumaric acid, itaconic acid, styrene sulfonic acid, vinyl sulfonic acid, isopropenyl phosphonic acid, vinyl phosphonic acid, vinylidene diphosphonic acid, 2-acrylamido-2-methylpropane sulfonic acid and mixtures thereof.

20           21. The building material composition of claim 18, wherein said water-soluble cationic moiety is selected from the group consisting of Na, K, Ca and NH<sub>4</sub>.

25           22. The building material composition of claim 18, wherein the weight average molecular weight (Mw) ranges from 1,000–1,000,000.

23. The building material composition of claim 18, wherein the weight average molecular weight (Mw) ranges from about 1,000 to about 50,000.

30           24. The building material composition of claim 18, wherein the weight average molecular weight (Mw) ranges from about 1,500 to 25,000.

25. The building material composition of claim 18, wherein the ratio c:d:e ranges from about 20:10:1 to 1:1:20.

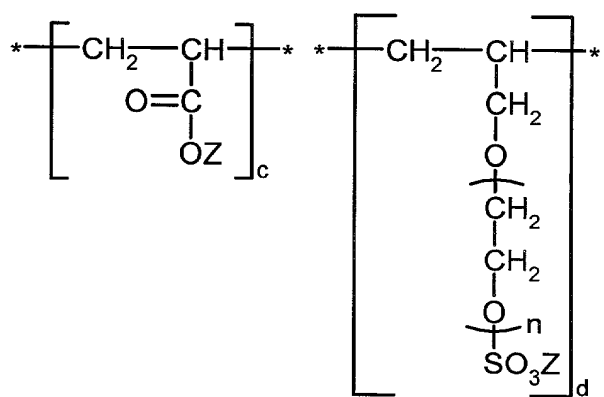
26. The building material composition of claim 18, wherein e is zero and the ratio c:d ranges from about 30:1 to about 1:20.

27. The building material composition of claim 18, wherein n ranges from about 1 to 20.

28. The building material composition of claim 18, wherein the cement is selected from the group consisting of concrete, tile cements and adhesives, projection plasters, stuccos based on cement and synthetic binders, ready mixed mortars, manually applied mortars, underwater concrete, joint cement, crack fillers, floor screeds, and adhesive mortars.

29. The building material composition of claim 18, wherein the gypsum is plaster of Paris.

30. A building material composition comprising (a) a water-soluble or water dispersible polymer of the formula:



wherein n ranges from about 1-100, Z is hydrogen or a water-soluble cation, and (b) a binding material of cement or gypsum.

31. The building material composition of claim 30, wherein said water soluble cation is selected from the group consisting of Na, K, Ca,  $\text{NH}_4$ , and mixtures thereof.

5 32. The building material composition of claim 30, wherein the ratio c:d ranges from about 30:1 to about 1:20.

33. The building material composition of claim 30, wherein the molecular weight Mw ranges from about 1,000 to 1,000,000.

10 34. The building material composition of claim 30, wherein the molecular weight Mw ranges from about 1,000 to 50,000.

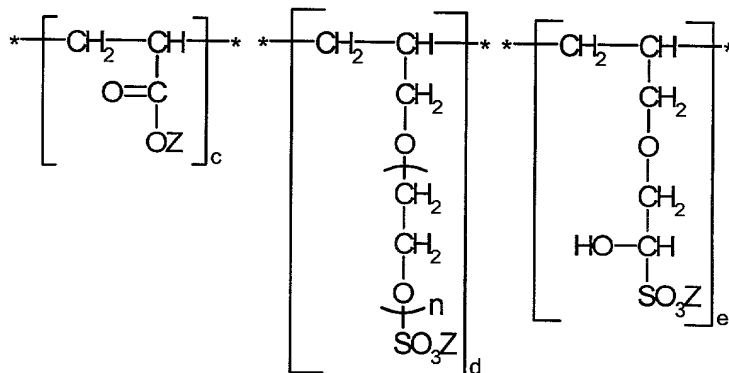
15 35. The building material composition of claim 30, wherein the molecular weight Mw ranges from about 1,000 to 25,000.

36. The building material composition of claim 30, wherein n ranges from about 1 to 20.

20 37. The building material composition of claim 30, wherein the cement is selected from the group consisting of concrete, tile cements and adhesives, projection plasters, stuccos based on cement and synthetic binders, ready mixed mortars, manually applied mortars, underwater concrete, joint cement, crack fillers, floor screeds, and adhesive mortars.

25 38. The building material composition of claim 30, wherein the gypsum is plaster of Paris.

39. A building material composition comprising (a) a water-soluble or water dispersible polymer of the formula



wherein n ranges from about 1-100, and z is hydrogen or a water-soluble cation, and (b) a binding material of cement or gypsum.

40. The building material composition of claim 39, wherein said water soluble cation is selected from the group consisting of Na, K, Ca, NH<sub>4</sub>, and mixtures thereof.

41. The building material composition of claim 39, wherein the ration c:d:e ranges from about 20:10:1 to about 1:1:20.

42. The building material composition of claim 39, wherein the molecular weight Mw ranges from about 1,000 to 1,000,000.

43. The building material composition of claim 39, wherein the molecular weight Mw ranges from about 1,000 to 50,000.

44. The building material composition of claim 39, wherein the molecular weight Mw ranges from about 1,000 to 25,000.

45. The building material composition of claim 39, wherein n ranges from about 1 to 20.

